

## CHIMNEYS AND VENTS

### 3621.1 GENERAL

**NOTE:** The requirements of 780 CMR 3621 are to be recognized in conjunction with applicable requirements of 248 CMR and/or 527 CMR for gas-fired and oil-fired appliances respectively; also note that 248 CMR is enforced by Gas Inspectors and 527 CMR is enforced by the Heads of Fire Departments.

**3621.1.1 Vent required:** Fuel-burning appliances shall be vented to the outside in accordance with their listing and label and manufacturer's installation instructions. Venting systems shall consist of approved chimneys or vents, or venting assemblies which are integral parts of labeled appliances.

**3621.1.2 Draft requirements:** A venting system shall satisfy the draft requirement of the equipment in accordance with the manufacturer's installation instructions and shall be constructed and installed to develop a positive flow to convey combustion products to the outside atmosphere.

**3621.1.3 Inspection of chimneys:** Before connecting a vent connector to a chimney, the chimney passageway shall be cleaned and free of obstructions. When inspection reveals that an existing chimney is not safe for the intended application, it shall be rebuilt to conform to 780 CMR 3610.2 if the chimney is a masonry chimney (or applicable requirements of 248 CMR or 527 CMR), lined or relined with an approved liner, or replaced with an approved vent or chimney.

**3621.1.4 Mechanical draft systems:** A mechanical draft system shall be used only with equipment listed and labeled for such use. Provision shall be made to prevent the flow of fuel to the equipment when the draft system is not operating. Forced draft systems and all portions of induced draft systems under positive pressure during operation shall be designed

and installed so as to prevent leakage of flue gases into a building.

**3621.1.5 Direct vent appliances:** *Direct vent* appliances shall be listed and labeled and shall be installed in accordance with the manufacturer's installation instructions

**3621.1.6 Support:** Venting systems shall be adequately supported for the weight of the material used.

**3621.1.7 Duct penetrations:** Vents or vent connectors shall not extend into or through supply and return air ducts or plenums.

**3621.1.8 Firestopping:** Vent and chimney installations shall be firestopped in accordance with 780 CMR 3606.2.7.

**3621.1.9 Unused openings:** Unused openings in any venting system shall be closed or capped.

### 780 CMR 3621.2 - VENT COMPONENTS

**3621.2.1 Draft hoods:** Unless otherwise allowed by 248 CMR or 527 CMR as applicable, draft hoods shall be located in the same room or space as the combustion air openings for the appliances.

**3621.2.2 Vent dampers:** Vent dampers shall comply with 780 CMR 3621.2.2.1 and 3621.2.2.2.

**3621.2.2.1 Manually operated:** Unless otherwise allowed by 248 CMR or 527 CMR as applicable, manually operated dampers shall not be installed except in connectors or chimneys of solid fuel-burning appliances.

**3621.2.2.2 Automatically operated:** Automatically operated dampers shall be installed in accordance with the requirements of 248 CMR or 527 CMR if applicable and otherwise in

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accordance with the terms of their listing and label and the manufacturer's requirements and shall be installed to prevent firing of the burner unless the damper is opened to a safe position. Automatic dampers shall conform to ANSI Z21.66.

**3621.2.3 Draft regulators:** For oil-fired appliances required to be connected to a chimney, draft regulators shall be provided as required by 527 CMR. Draft regulators provided for solid-fuel-burning appliances to reduce draft intensity shall be installed and set in accordance with the manufacturer's installation and operation requirements.

**3621.2.3.1 Location:** When required by 248 CMR or 527 CMR or the manufacturer's installation/operation requirements, draft regulators shall be installed in the same room or enclosure as the appliance such that no difference in pressure between the air at the regulator and the combustion air supply will exist.

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**780 CMR 3621.3 CHIMNEY AND VENT CONNECTORS****3621.3.1 Chimney and vent connectors:**

Connectors shall be used to connect fuel-burning appliances to a vertical chimney or vent unless the chimney or vent is attached directly to the appliance.

**3621.3.2 Connectors for gas appliances:** See 248 CMR

**3621.3.3 Connectors for oil and solid fuel appliances:** For connector requirements for oil-fired appliances, see 527 CMR. For solid fuel-burning appliances, connectors compatible with the listed appliance shall be utilized and may include, but not be limited to factory-built chimney material, Type L vent material, Type PL vent material or single-wall metal pipe having resistance to corrosion and heat, and thickness not less than that of galvanized steel as specified in Table 3621.3.3.

**Table 3621.3.3  
THICKNESS FOR SINGLE-WALL  
METAL PIPE CONNECTORS**

Diameter of Connector (in)	Sheet Metal Gage Number
Less than 6	26
6 to 10	24

For SI: 1 inch = 25.4 mm

**3621.3.4 Installation:** Unless otherwise permitted by 248 CMR or 527 CMR, if applicable, the following requirements shall be met: vent and chimney connectors shall be installed in accordance with the appliance manufacturer's installation instructions and within the space that the appliance is located. Appliances shall be located as close as practical to the vent or chimney. Connectors shall be as short and straight as possible and installed with a rise of not less than ¼ inch (6.4 mm) to the foot run. Connectors shall be securely supported and joints shall be fastened with sheet metal screws and rivets. Devices that obstruct the flow of flue gases shall not

be installed in a connector unless listed and labeled or approved for such installations.

**3621.3.4.1 Location:** When the connector serving a gas appliance with a draft hood is located in nonconditioned space, that portion of the connector shall conform to the requirements of 248 CMR.

**3621.3.4.2 Floors ceiling and wall penetrations:**

A chimney connector or vent connector shall not pass through any floor, ceiling, wall, or partition unless the connector is listed and labeled for wall pass-through, or is routed through a device listed and labeled for wall pass-through and is installed in accordance with the conditions of its listing and label. Connectors for listed and labeled gas appliances with draft hoods, and oil-fired appliances listed and labeled for Type L vents, passing through walls or partitions shall be in accordance with the following:

1. Type B or Type L vent material for gas appliances and Type L vent material for oil appliances shall be installed with not less than listed and labeled clearances to combustible material.
2. Single-wall metal pipe shall be guarded by a ventilated metal thimble not less than four inches (102 mm) larger in diameter than the vent connector.

**3621.3.4.3 Length:** Unless otherwise permitted by 248 CMR or 527 CMR, if applicable, the horizontal run of an uninsulated connector to a natural draft chimney shall not exceed 75% of the height of the vertical portion of the chimney above the connector. The horizontal run of a listed connector to a natural draft chimney shall not exceed 100% of the height of the vertical portion of the chimney above the connector.

**3621.3.4.4 Size:** A connector shall not be smaller than the flue collar of the appliance.

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**Exception:** When the appliance is otherwise listed for such connector application and the respective requirements of 248 CMR or 527 CMR, if applicable, so allow.

**3621.3.4.5 Clearance:** Connectors shall be installed with clearance to combustibles as set forth in NFPA 211, Section 6-5.1. Reduced clearances to combustible material shall be in accordance with NFPA 211, Section 6-5.1.2.

**3621.3.4.6 Access:** The entire length of a connector shall be accessible for inspection, cleaning and replacement.

**3621.3.4.7 Fireplace connection:** An appliance shall not be connected to a chimney flue serving a fireplace unless the fireplace opening is sealed or the chimney flue which vents the fireplace is permanently sealed below the connection. (Also see 780 CMR 3610.6.5.2).

**3621.4.2.2 Natural draft appliances:** Vents for natural draft fossil fuel-fired appliances shall terminate at heights above the highest connected appliance in accordance with the requirements of 248 CMR or 527 CMR as applicable, otherwise such vents shall terminate at least five feet (1524 mm) above the highest connected appliance outlet, and natural draft gas vents serving wall furnaces shall terminate at an elevation at least 12 feet (3658 mm) above the bottom of the furnace. Also see 780 CMR 3610 generally.

**3621.4.2.3 Type B or BW vent:** See 248 CMR.

**3621.4.2.4 Type L vent:** For oil-fired appliances, see 527 CMR (in the absence of guidance from 527 CMR, such vents shall terminate not less than 2 feet (610 mm) above any portion of the building within ten feet (3048 mm)).

**3621.4.2.5 Direct vent appliances:** See 248 CMR or 527 CMR if applicable, otherwise, the vent terminal of a direct vent appliance with an

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**3621.4.1 Type of vent required:** Gas-fired and oil-fired appliances shall be vented in accordance with 248 CMR or 527 CMR as applicable. Solid fuel-burning appliances shall be vented in accordance with the requirements of 780 CMR 3610.6.5.2 and 3610.6.6 and additionally in accordance with their listing and manufacturer's requirements, as applicable.

**3621.4.2 Termination:** Vent termination shall comply with 780 CMR 3621.4.2.1 and 3621.4.2.6.

**3621.4.2.1 Through the roof:** Vents passing through a roof shall extend through flashing and terminate in accordance with the manufacturer's installation requirements.

input of 50,000 Btu/h (14 655 W) or less shall be located not less than nine inches (229 mm) from any opening through which vent gases could enter a building. The vent terminal of a direct vent appliance having an input exceeding 50,000 Btu/h (14 655 W) shall be located not less than 12 inches (305 mm) from the opening. The bottom of a vent terminal and an air intake shall be located at least 12 inches (305 mm) above grade and in all cases shall comply to manufacturer's installation requirements when such requirements exceed the criteria of 780 CMR 3621.4.2.5.

**3621.4.2.6 Mechanical draft systems:** Mechanical draft systems other than direct vent systems shall be installed in accordance with 248 CMR or 527 CMR if applicable, otherwise such systems shall be installed in accordance with their listing and the manufacturer's installation requirements.

**3621.4.3 Installation:** Type B, Type BW and Type L vents shall be installed in accordance with the applicable requirements of 248 CMR or 527 CMR

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and otherwise in accordance with the terms of their listing and label and the manufacturer's installation instructions. For venting systems for listed and labeled Category II, III and IV gas appliances, see 248 CMR and the manufacturer's installation instructions.

**3621.4.3.1 Size of single appliance venting systems:** Except as otherwise allowed by 248 CMR or 527 CMR as applicable, an individual vent for a single appliance shall have a cross-sectional area equal to or greater than the area of the connector to the appliance, but not less than seven square inches (4515 mm<sup>2</sup>) except where the vent is an integral part of a listed and labeled appliance. Also see 780 CMR 3610 generally.

**3621.4.3.2 Size of multiple-appliance venting systems.** For gas-fired and oil-fired appliances, see 248 CMR or 527 CMR as applicable. For other appliances see 780 CMR 3610 generally.

Note 1: Connectors serving appliances operating under natural draft shall not be connected into any portion of a mechanical draft system operating under positive pressure.

Note 2: Solid fuel-burning appliances shall not be connected to a vent serving another appliance burning other fuels except as noted in 780 CMR 3610.6.10.

**3621.4.3.3 Size of solid fuel vents:** See 780 CMR 3610.6.5.2.

## **3621.5 MASONRY AND FACTORY-BUILT CHIMNEYS**

**3621.5.1 Masonry and factory-built chimneys - general:** Masonry and factory-built chimneys shall be built and installed in accordance with 780 CMR 3610.

**3621.5.2 Installation of factory-built chimneys:** Factory-built chimneys and chimney units shall be

installed in accordance with the manufacturer's installation instructions such that flue gas temperatures in the chimney shall not exceed the limits specified in their listing and label. Factory-built chimneys for use with wood-burning appliances shall be Type HT - Also see 780 CMR 3610.3.

**3621.5.3 Masonry chimney connection:** Unless otherwise allowed by 248 CMR or 527 CMR, if applicable: a chimney connector shall enter a masonry chimney not less than six inches (153 mm) above the bottom of the chimney, except that if six inches (153 mm) are not available, a cleanout shall be provided by installing a capped tee in the connector next to the chimney. A connector entering a masonry chimney shall extend through, but not beyond the wall and shall be flush with the inner face of the liner. Connectors, or thimbles, when used, shall be firmly cemented into the masonry.

**3621.5.4 Size of masonry chimneys:** The effective area of a natural draft chimney flue for one appliance shall not be less than the area of the connector to the appliance. Chimneys connected to more than one appliance shall not be less than the area of the largest connector plus 50% of the areas of additional vent connectors - also see 780 CMR 3610.2.10 and 3610.2.11.

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**3621.5.4.1 Size of chimney for single gas appliance:** See 248 CMR.

**3621.5.4.2 Size of chimney for multiple gas appliance:** See 248 CMR.